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(54) Title of the invention: Position interlocking type  
data broadcast service method and receiver  
(57) Abstract:  
Problem to be solved: To provide a position  
interlocking type data broadcast service and a receiver  
that can attain a more sophisticated data broadcast  
service, taking into the consideration the convenience,  
the operability and also the life time of recipient.  
Solution: A broadcast station (a) broadcasts information  
of a genre which includes position information as part  
of a data broadcast service to a receiver (b), in a way  
that the receiver (b) can extract only required  
information efficiently, on the basis of position  
information of the receiver and the position information  
included in the genre information.

The receiver (b) filters information existing in a concentric area within a radius of a prescribed distance from own position P and displays 'nearby information' and 'details of information items (7), (8)', as shown on a data broadcast picture 2, when judging that the required information is present in information items (7), (8) existing in a concentric circle closest to own position P.

### **[Claims]**

[Claim 1] A position interlocking type data broadcast service method characterized by what it is broadcast for based on position information by which a receiver is contained in position information and the mentioned above genre information of the receiver as only required information can be taken out, genre information which is a data broadcast service method which a broadcast station performs, and includes position information.

[Claim 2] A receiver characterized by comparing position information included in received genre information with an addressee's position information, it judges the necessity and taste for an addressee, it displays information required for an addressee as data broadcasting automatically and information which is not required for an addressee is provided with a function which is not displayed, when receiving data broadcasting broadcast based on position information by which a receiver is contained in position information and the mentioned above genre information of the

receiver in genre information including position information as could take out only required information

[Claim 3] A position interlocking type data broadcast service method characterized by what is broadcast as document information which branches in the document according to the comparison result except a document for the disaster areas, and the disaster area, when comparison with position information on the receiver and position information included in the mentioned above disaster information is made in a receiver in disaster information which is a data broadcast service method which a broadcast station performs, and includes position information by latitude longitude or a zip code,.

[Claim 4] A receiver provided with a function to start the document except the mentioned above disaster area, and to perform only a notice of disaster information generating when the mentioned above document for the disaster areas is started and the contents of disaster information are displayed when contained in the disaster area, and not contained in the disaster area, when comparison with position information on the receiver and position information included in the mentioned above disaster information is made in a receiver in disaster information including position information by latitude, longitude or a zip code, when receiving data broadcasting broadcast as document information which branches in the document according to the comparison result except a document for the

disaster areas, and the disaster area, position information by an addressee's latitude longitude is acquired by an external position information providing means or position information on a self-area is acquired from a zip code stored preliminary, an addressee's acquired position information is compared with position information included in received disaster information.

[Claim 5] A position interlocking type data broadcast service method characterized by what is broadcast as a document for the disaster areas that branch when comparison with position information on the receiver and position information included in the mentioned above disaster information is made in a receiver and it is in agreement, disaster information which is a data broadcast service method which a broadcast station performs, and includes position information by latitude, longitude or a zip code.

[Claim 6] A receiver having a function which continues viewing of the usual data broadcast program when the mentioned above document for the disaster areas is started, the contents of disaster information are displayed and it is not contained in the disaster area, comparison with position information included in position information and the mentioned above disaster information of the receiver in a receiver should do disaster information including position information by latitude longitude or a zip code. When in agreement and receiving data broadcasting broadcast as a document for the branched disaster areas, position information by an

addressee's latitude longitude is acquired by an external position information providing means or when position information on a self-area is acquired from a zip code stored preliminary, an addressee's acquired position information is compared with position information included in received disaster information and it is contained in the disaster area,.

[Claim 7] A position interlocking type data broadcast service method which is a data broadcast service method which a broadcast station performs, and is characterized by what information on various genres is broadcast for with position information as a document for every genre.

[Claim 8] A receiver which displays the contents of the document of the selected genre concerned when information related to an addressee's position is included in a document of the mentioned above selected genre, and is characterized by including a function which continues viewing of the usual data broadcast program when not contained, when a broadcast station receives data broadcasting which broadcast information on various genres with position information as a document for every genre, a document of a genre corresponding to genre information preliminary registered out of a document for the mentioned above every genre contained in received data broadcasting is chosen, position information given to a document of a selected genre is compared with an addressee's position

information acquired by an external position information providing means.

[Claim 9] A receiver including a function that displays the contents of the document of a genre after indicating by package with a table, when information acquired from the mentioned above addressee's position information exists in plurality of genres in the receiver according to claim 8.

### **[Detailed description of the invention]**

[0001] [Field of the invention] This invention relates to the receiver which receives the position interlocking type data broadcast service method which broadcasts the genre information which includes the position information by latitude longitude, a zip code, etc. as part of the data broadcast service and its data broadcasting in a satellite or terrestrial digital broadcasting.

[0002] [Summary of the invention] Based on the position information by which a receiver is contained in the position information and genre information of the receiver in the genre information in which a broadcast station includes position information as part of data broadcast service, as the present invention can take out only information required for an efficiency target, it broadcasts it. The position information included in the received genre information in a receiver is compared with the position information on a receiver, the necessity for an addressee and taste are judged,

information required for an addressee is automatically displayed as data broadcasting, and the information which is not required for an addressee is related with the position linkage type data broadcast service it is made not to display.

[0003] When the position information by which the broadcast station specifically included the genre information broadcast as part of the data broadcast service to the time of a disaster outbreak in the position information and genre information of the receiver in the receiver is compared, it broadcasts as document information which branches according to the comparison result in a plurality of kinds of BML (Broadcasting Markup Language) documents. In a receiver, an addressee's position information is acquired from an external position information providing means or zip code stored preliminary, an addressee's acquired position information is compared with the position information included in the received genre information, and it performs a display and un-displaying of information by branching according to the comparison result to one of a plurality of kinds of the BML documents.

[0004] Thus, when broadcasting disaster information as a part of data broadcasting as genre information, at a broadcast station, position information is attached and broadcast as BML document information which branches in the BML document except the BML document for the disaster areas, and the disaster area. A

receiver compares an addressee's position information and the position information included in the received disaster information, when the BML document for the disaster areas is started and the contents of disaster information, such as refuge information, are displayed, when contained in the disaster area, and not contained in the disaster area, the BML document can be started except the mentioned above disaster area, and reception and a display of the usual data broadcasting, such as a notice of disaster information generating, can be performed.

[0005] When broadcasting the information related to an addressee's taste, including news, traffic information, restaurant information, shopping information, etc., as a part of data broadcasting as genre information, at a broadcast station, the BML document for every genre is prepared, and position information is attached and broadcast to it. By registering the information on an addressee's taste as a genre preliminary, and searching automatically self position information, the position information on the information sent from the registered genre information, and genre information with a receiver, the BML document which can present the optimal information suitable for the position and taste of an addressee can be chosen and displayed.

[0006] [Description of the prior art] Drawing 12 is a drawing explaining the data broadcast service using the conventional currency information.



Conventionally, the service using the zip code as data broadcast service using currency information is known.

[0007] In drawing 12, by such service, the broadcast station (a) is broadcasting each information 1 - 9 in arbitrary positions so that it may be shown as the position information plain 121. An addressee extracts information 578 which is in a certain fixed range 1 centering on the self position P based on a zip code, and makes it display on Screen 122 in a receiver (b). And an addressee chooses each information on 578, displays individually the contents 123 of information 5, the contents 124 of information 7, and the contents 125 of information 8, respectively, and is made to acquire information required for self from this screen 122.

[0008] [Problems to be solved by the invention] By the way, the start of a satellite or terrestrial digital broadcasting will enable it to broadcast information more suitable only for the addressee of a disaster area region, and detailed from now on, for example at the time of a disaster. The service also of the information on the genre related to an addressee's taste, including traffic information, restaurant information, news, shopping information besides disaster information, etc., broadcast collectively is achieved.

[0009] In this case, in the method of an addressee operating a receiver as mentioned above, and choosing information. It is not appropriate in respect of convenience, operability, quick nature, etc., and to enable it or to perform whether it displays is desired

which displays automatically the information on data broadcasting that the receiver itself judged the necessity for an addressee and taste, and it was suitable for each addressee.

[0010] In order to realize more advanced data broadcast service taken into consideration to such an addressee's convenience, operability, and a life, in the broadcast station side and a receiver, it is a problem how it is realized by having the following functions.

[0011] Namely, since the broadcast station side needs to relate genre information with an addressee's position information and needs to broadcast it, (1) The method of coding efficiently genre information including position information and the way they broadcast self position information to it from genre information including position information as (2) receivers can take out only genre information required for an efficiency target to origin need to be developed.

[0012] By a receiver, simultaneously the genre information with position information which carried out (3) reception in connection with an addressee's position information. In the case of the information which is not required for the function which judges the necessity for an addressee, and taste, and on which genre information is automatically displayed as data broadcasting, and (4) addressees, the receiver provided with the function on which it is not made to display is required.

[0013] This invention is made in view of such a situation, and the purpose is to provide the position interlocking type data broadcast service and the receiver which were taken into consideration to operability and a human life and whose more advanced data broadcast service is achieved.

[0014] [Means for solving the problem] To achieve the above objects, the position interlocking type data broadcast service method according to claim 1, it is a data broadcast service method which a broadcast station performs, and is characterized by broadcasting it based on position information by which a receiver is contained in position information and the mentioned above genre information of the receiver in genre information including position information, as only required information can be taken out.

[0015] According to this method, disaster information, news and traffic information, restaurant information, since it is broadcast based on position information by which genre information, such as shopping information, is included in position information on a receiver, and information on the mentioned above genre as only information required for an efficiency target can be taken out, the addressee can acquire information on a genre suitable for self easily.

[0016] The receiver according to claim 2 genre information including position information a receiver, when receiving data broadcasting broadcast based on position information on the receiver, and position

information included in the mentioned above genre information as could take out only required information; position information included in received genre information is compared with an addressee's position information, the necessity for an addressee and taste are judged, information required for an addressee is automatically displayed as data broadcasting, and it is characterized by providing information which is not required for an addressee with a function which is not displayed.

[0017] Since displaying information required for an addressee as data broadcasting, and not displaying information which is not required for an addressee is performed automatically according to this composition, the addressee needs to cease to do difficult operation of choosing oneself required information.

[0018] The position interlocking type data broadcast service method according to claim 3, when comparison with position information on the receiver and position information included in the mentioned above disaster information is made in a receiver in disaster information which is a data broadcast service method which a broadcast station performs, and includes position information by latitude longitude or a zip code, it is characterized by what is broadcast as document information which branches in the document according to the comparison result except a document for the disaster areas, and the disaster area.

[0019] According to this method, the broadcast station can broadcast disaster information as document information which branches in the document according to position information except a document for the disaster areas, and the disaster area, when a disaster occurs. Thus, the addressee whose position information corresponded can acquire without omission information about a disaster generated with a document for the disaster areas, and it becomes possible to take a suitable measure etc. promptly. On the other hand, generally the addressee whose position information does not correspond can know generating of a disaster on the same level as news.

[0020] When comparison with position information on the receiver and position information included in the mentioned above disaster information is made in a receiver in disaster information in which the receiver according to claim 4 includes position information by latitude longitude or a zip code, when receiving data broadcasting broadcast as document information which branches in the document according to the comparison result except a document for the disaster areas, and the disaster area, position information by an addressee's latitude longitude is acquired by an external position information providing means or position information on a self-area is acquired from a zip code stored preliminary, an addressee's acquired position information is compared with position information included in received disaster information, when the

mentioned above document for the disaster areas is started and the contents of disaster information are displayed, when contained in the disaster area, and not contained in the disaster area, it is characterized by having a function to start the document except the mentioned above disaster area, and to perform only a notice of disaster information generating.

[0021] According to this composition, if disaster information is received when a receiver has received data broadcasting, self position information can be acquired by arbitrary methods, it can be received except<sup>t</sup> a document for the disaster areas, and the disaster area any of the document they are based on acquired self position information, and information on optimal data broadcasting can be displayed by each addressee's situation. When it corresponds to a disaster area, data broadcasting, such as refuge information, can specifically be received automatically, and it can respond now appropriately to a disaster outbreak. When it does not correspond to a disaster area, the usual data broadcasting can be received automatically.

[0022] The position interlocking type data broadcast service method according to claim 5, which is a data broadcast service method which a broadcast station performs, and includes position information by latitude longitude or a zip code, it is characterized by what is broadcast as a document for the disaster areas which branch when comparison with position information on the receiver and position information included in the

mentioned above disaster information is made in a receiver and it is in agreement.

[0023] According to this method, a broadcast station can broadcast a document for the disaster areas which show only an addressee whose position information corresponded disaster information, when a disaster occurs. Thus, the addressee whose position information corresponded can acquire without omission information about a disaster generated with a document for the disaster areas, and it becomes possible to take a suitable measure etc. promptly. On the other hand, the addressee whose position information does not correspond can usually pass and can continue viewing of data broadcasting.

[0024] In the receiver according to claim 6 disaster information including position information by latitude longitude or a zip code, comparison with position information included in position information and the mentioned above disaster information of the receiver in a receiver should perform. When in agreement and receiving data broadcasting broadcast as a document for the branched disaster areas, position information by an addressee's latitude longitude is acquired by an external position information providing means or when position information on a self-area is acquired from a zip code stored preliminary, an addressee's acquired position information is compared with position information included in received disaster information and it is contained in the disaster area, when the mentioned

above document for the disaster areas is started, the contents of disaster information are displayed and it is not contained in the disaster area, it is characterized by having a function which continues viewing the usual data broadcast program.

[0025] Since according to this composition the receiver can receive a document for the disaster areas when self position information is acquired by arbitrary methods and acquired self position information is in agreement if disaster information is received when having received data broadcasting, when it corresponds to a disaster area, data broadcasting, such as refuge information, can be received automatically, and it can respond now appropriately to a disaster outbreak. When not in agreement, viewing the usual data broadcast program can be continued.

[0026] The position interlocking type data broadcast service method according to claim 7 is a data broadcast service method which a broadcast station performs, and is characterized by broadcasting information on various genres with position information as a document for every genre.

[0027] According to this method, the broadcast station can broadcast information on a genre made a relation with position information as a document for every genre to taste of addressees, such as news, traffic information, restaurant information, shopping information, etc. besides disaster information.



Thus, information on a genre suitable for a self taste can acquire an addressee now easily by preparing as a genre liking which user wishes preliminary.

[0028] When a broadcast station receives data broadcasting which broadcast information on various genres with position information as a document for every genre, the receiver according to claim 8, a document of a genre corresponding to genre information preliminary registered out of a document for the mentioned above every genre contained in received data broadcasting is chosen, position information given to a document of a selected genre is compared with an addressee's position information acquired by an external position information providing means, when information related to an addressee's position is included in a document of the mentioned above selected genre, the contents of the document of the selected genre concerned are displayed, and when not contained, it is characterized by having a function which continues viewing the usual data broadcast program.

[0029] According to this composition, an addressee registers as a genre liking which user wishes preliminary, since a receiver can search automatically genre information currently broadcast and its position information based on self position information and registered genre information if genre information is received when it has received data broadcasting, it can display genre information suitable for a position and

taste of an addressee. Disaster information can also be included.

[0030] In the receiver according to claim 8, when information acquired from the mentioned above addressee's position information exists in a plurality of genres, after the receiver according to claim 9 indicates by package with a table, it is characterized by having a function which displays the contents of the document of a genre.

[0031] Since it can indicate by package with a table when information acquired from an addressee's position information exists in a plurality of genres according to this composition, the addressee can choose information on a suitable genre.

[0032] [Embodiment of the invention] <Principle of this invention> The principle of this invention is explained in advance of explanation of an embodiment. Drawing 1 is a principle drawing explaining the position interlocking type data broadcast service method of this invention. In drawing 1, based on the position information by which a receiver (b) is contained in the position information and genre information of the receiver in the information on the genre which includes position information as part of data broadcast service, as the broadcast station (a) can take out only information required for an efficiency target, by this invention, it broadcasts it.

[0033] The broadcast station has arranged with concerned genre information for receivers preliminary here, and it consists of various information related to an addressee's taste, including traffic information, restaurant information, news, shopping information besides disaster information, etc.

[0034] The information shown to an addressee with a receiver is broadcast in the form of a BML document. Thus, in a receiver, it branches in a plurality of kinds of BML documents, and presentation of information is made by one of them.

[0035] The position information which a broadcast station gives is the position information on the place where each information exists. Without coding, this position information and its pertinent information may be included in the mentioned above BML document, and it may be broadcast that they are XML (eXtensible Markup Language) or a case where it is binary, code and it broadcasts.

[0036] Information 1-9 shown on the position information plain 1 are the information which made it such and was broadcast, and include an image, a sound, a still picture, an animation, etc.

[0037] The receiver (b) is provided with the BML browser which displays data broadcasting. This BML browser may be provided with API (Application Program Interface) etc. which can filter and can take out the information on an XML document file including

position information or a binary file as compared with self position information.

[0038] The receiver (b) incorporated self position information from GPS, a portable telephone, a zip code, etc., and has managed it as latitude longitude information or mesh data which divided the map into mesh state. And it filters by comparing such self position information with the position information on the received XML document. That is, it branches in a plurality of kinds of BML documents, and presentation of information is made by one of them.

[0039] As this method of filtering, the technique of filtering the information on the concentric circle shape which makes a radius fixed distance which exists centering on a self position or the technique of filtering the information on the range of the mesh state which exists centering on a self position and as for which constant distance separated is used.

[0040] The method of filtering the information on the concentric circle shape which makes a radius fixed distance which a receiver (b) has centering on the self position P is shown by drawing 1. It is shown that it is distinguished that information 78 is in the concentric circle nearest to the self position P, information 459 is in the concentric circle near the next, and information 1236 is in the furthest position.

[0041] When it judges that a receiver (b) has information required for information 78 in the concentric circle nearest to the self position P, as shown

on the data broadcast screen 2, «nearby information» and «the details of information 78» are displayed.

[0042] Although there is no information required for information 78 in the nearest concentric circle, when it judges that there is information required for information 459 in the concentric circle near the next, as shown on the data broadcast screen 3, the display which informs that information exists in the range, saying «There is information on 459 is performed. The addressee can see the details of the information 459 by scrolling.

[0043] About information 1236 only in the self position P and a position with few relations, as shown on the data broadcast screen 4, an automatic display is not performed. In this case, an addressee can operate the Data button, can take out the menu screen 5 of data broadcasting and can acquire information now from that menu screen 5.

[0044] Thus, in this invention, advanced data broadcast service is realizable rather than displaying automatically the information on data broadcasting that the receiver judged the necessity for position information or an addressee, and taste, and fitted the addressee of its that most by an addressee's position information and the position information on genre information.

[0045] <Embodiment of the invention> Next, an embodiment of the invention is described in details with reference to drawings. In following embodiments, although the broadcast station mentions as the example the case where the XML document which coded

position information and its pertinent information by XML is broadcast with a BML document, even if it is binary and codes, the same operation effect is obtained. It is also possible to include all of position information and its pertinent information in the BML document for presentation, and to send them out, without using an XML document.

[0046] [Embodiment 1] Drawing 2 is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 1 of the invention broadcasts. Example 1 of the position interlocking type data broadcast service method with which a broadcast station broadcasts disaster information with position information as part of data broadcast service is shown by this Embodiment 1.

[0047] In drawing 2, the broadcast station 21 is performing data broadcasting using the transmitting equipment 22 of a satellite and ground digital broadcasting. The disaster information which the broadcast station 21 sends out as a part of this data broadcasting includes XML document 23 and the BML document 24.

[0048] XML document 23 of each detailed area (position) at each time is the document which coded latitude, longitude information, disaster information, a related map file name, etc. by XML. At this time, a still picture, an animation, etc. related to those information are sent out collectively.

[0049] The BML document 24, the Start Up BML document 25, the BML document 26 for disaster area, and except a disaster area region includes the BML document 27. Performing comparison with self position information and the position information on the information in an XML document to a receiver, while the Start Up BML document 25 starts the browser of a receiver except the BML document 26 for disaster area, and a disaster area region is a document which directs what should be branched in the BML document 27. Except the BML document 26 for disaster area, and a disaster area region, the BML document 27 is a document which actually presents information in response to branching directions in a receiver from a Start Up BML document.

[0050] Thus, at Embodiment 1, in the timing that it is arbitrary during broadcast of a data broadcast program, a broadcast station is broadcast with position information according disaster source division-oriented disaster information and the disaster information for except a disaster source division to latitude, longitude, when a disaster occurs.

[0051] [Embodiment 2] Drawing 3 is a functional block diagram showing the composition of the receiver according to the embodiment 2 of the invention. The example of composition of the receiver which receives data broadcasting which the broadcast station according to Embodiment 1 makes include disaster information, and is broadcasting is shown by this Embodiment 2.

[0052] In drawing 3, the BML browser 32 which displays data broadcasting in the receiver 31 is provided with API which can filter and take out the information on an XML document file including position information. This BML browser 32 can acquire latitude longitude information now from the position signal which GPS Satellite 33 transmits through API.

[0053] In the receiver 31, if an addressee tunes in the program concerned, in a receiver, front end processing, transformer stream processing, decoding, etc. will be carried out, and the processed information will be passed to the BML browser 32.

[0054] In the BML browser 32, the Start Up BML document 34 is displayed automatically. In the Start Up BML document 34, the present position information is first acquired from the sending signal of GPS Satellite 33. Next, the position information on the acquired self is compared with the position information included in an XML document, and it is judged whether the information around a self position existing in an XML document and a self position that is, correspond to a disaster area region. As a result, when the information related to a self position exists, the BML document 35 for disaster area is started automatically. In the case where the information related to a self position does not exist on the other hand, except a disaster area BML document 36 is started automatically.



[0055] The BML document 35 for disaster area filters and acquires the detailed information related to a self position from an XML document, and displays required information. A still picture, an animation, etc. are displayed as occasion demands. In this case, it changes from the program to which it was viewing the program of emergency evacuation information, the display of a reminder of emergency evacuation is performed, and the button etc. which change to a disaster state, the confirmation button of victim information or the map screen of an evacuation area are displayed.

[0056] On the other hand, data broadcasting which that the disaster has occurred only notifies is expressed as a disaster area, with the external use BML document 36. In this case, the addressee can continue, view a program (an image and a sound).

[0057] Thus, according to the receiver according to this Embodiment 2, the self position information acquired from GPS etc. is used, the information on the optimal data broadcasting can be made a display and non-display by each addressee's situation so that the usual data broadcasting may be received automatically, when data broadcasting, such as refuge information, is automatically received when it corresponds to a disaster source division, and it does not correspond to a disaster source division.

[0058] The self position information can use a GPS Satellite, and also can incorporate self position information with a cellular phone.

[0059] [Embodiment 3] Drawing 4 is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 3 of the invention broadcasts. Example 2 of the position interlocking type data broadcast service method with which a broadcast station broadcasts disaster information with position information as part of data broadcast service is shown by this Embodiment 3. In drawing 4, identical codes are given to drawing 2 and an identical configuration part.

[0060] In drawing 4, the broadcast station 41 is performing data broadcasting using the transmitting equipment 22 of a satellite and ground digital broadcasting. The disaster information which the broadcast station 21 sends out as a part of this data broadcasting includes XML document 23 and the BML document 42.

[0061] Embodiment 1 explained XML document 23 of each detailed area (position) in each time is the document which coded latitude, longitude information, disaster information, a related map file name, etc. by XML. At this time, a still picture, an animation, etc. related to those information are sent out collectively.

[0062] The BML document 42 is constituted from this Embodiment 3 by only the BML document 43 for disaster area. The BML document 43 for disaster area is a document which is started automatically in a receiver and presents disaster information.

[0063] Thus, in Embodiment 3, in the timing that it is arbitrary during broadcast of a data broadcast program, a broadcast station broadcasts disaster source division-oriented disaster information with position information by latitude longitude, when a disaster occurs.

[0064] [Embodiment 4] Drawing 5 is a functional block diagram showing the composition of the receiver according to the embodiment 4 of the invention. The example of composition of the receiver which receives data broadcasting which the broadcast station according to Embodiment 3 makes include disaster information, and is broadcasting is shown by this Embodiment 4. In drawing 5, identical codes are given to drawing 3 and an identical configuration part.

[0065] The receiver 51 is provided with the position information comparing element 52 which can acquire latitude longitude information from the position signal which GPS Satellite 33 transmits in drawing 5. The BML browser 53 which displays the disaster information under data broadcasting is started by this position information comparing element 52.

[0066] In the receiver 51, if an addressee tunes in the program concerned, in a receiver, front end processing, transformer stream processing, decoding, etc. will be carried out, and the processed information will be passed to the position information comparing element 52.

[0067] In the position information comparing element 52, the present position information is first acquired from the sending signal of GPS Satellite 33. Next, the position information on the acquired self is compared with the position information included in an XML document, and it is judged whether the information around a self position existing in an XML document and a self position that is, correspond to a disaster area region.

[0068] As a result, when the information related to a self position exists, the BML browser 53 is started automatically and the BML document 54 for disaster area is started automatically. When there is the buffer part 55 at this time, the self position information acquired by the position information comparing element 52 and the information around a self position acquired from the XML document are buffered.

[0069] The BML document 54 for disaster area performs filtering for the detailed information related to a self position from an XML document, and displays required information. A still picture, an animation, etc. are displayed as occasion demands.

[0070] Or when self position information, the detailed information around a self position, the still picture of relation, the animation, etc. are stored by the buffer part 55, the BML document 54 for disaster area acquires those information from the buffer part 55 and is shown.

[0071] Thus, when there is information related to a self position, it changes from the program to which user was viewing the program of emergency evacuation information, the display of a reminder of emergency evacuation is performed, and the button etc. which change to a disaster state, the confirmation button of victim information or the map screen of an evacuation area are displayed.

[0072] On the other hand, when the information related to a self position does not exist, the BML browser 53 is not started, but an addressee usually continues the program screen (an image and a sound) 56, and it can view and listen to it.

[0073] Thus, the self position information acquired from GPS according to the receiver according to this Embodiment 4 like the receiver according to Embodiment 2 is used, the information on the optimal data broadcasting can be made a display and non-display by each addressee's situation so that the usual data broadcasting may be received automatically, when data broadcasting, such as refuge information, is automatically received when it corresponds to a disaster source division, and it does not correspond to a disaster source division.

[0074] Since receiver functions (position information comparing element) other than a BML browser were made to perform the comparison branching directions with a self position and the position information in an XML document in this Embodiment 4 at this time, load

of a BML browser can be made light and the information display to an addressee can be performed smoothly. The self position information can use a GPS Satellite, and also can incorporate self position information with a cellular phone etc.

[0075] [Embodiment 5] Drawing 6 is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 5 of the invention broadcasts. Example 3 of the position interlocking type data broadcast service method with which a broadcast station broadcasts disaster information with position information as part of data broadcast service is shown by this Embodiment 5. In drawing 6, identical codes are given to drawing 2 and an identical configuration part.

[0076] In drawing 6, the broadcast station 61 is performing data broadcasting using the transmitting equipment 22 of a satellite and ground digital broadcasting. The disaster information which the broadcast station 61 sends out as a part of this data broadcasting includes XML document 62 and the BML document 24.

[0077] XML document 62 is a document which coded the zip code in each detailed area (position), disaster information, a related map file name, etc. by XML in this Embodiment 5. At this time, a still picture, an animation, etc. related to those information are sent out collectively.

[0078] On the other hand, the BML document 24 in Embodiment 1 is the same as the Start Up BML document 25, the BML document 26 for disaster area, and except a disaster area includes the BML document 27. While the Start Up BML document 25 starts the browser of a receiver, performing comparison with self position information (zip code) and the position information on the information in an XML document (zip code) to a receiver the BML document 26 for disaster area, and a disaster area, it is a document which directs what should be branched in the BML document 27. The BML document 26 for disaster area, and a disaster area the BML document 27 is a document which actually presents information in response to branching directions in a receiver from a Start Up BML document.

[0079] Like this operation, in the timing that it is arbitrary during broadcast of a data broadcast program, a broadcast station is broadcast at Embodiment 5 with position information, when a disaster occurs according to disaster source area information and the disaster information for except a disaster source area zip code.

[0080] [Embodiment 6] Drawing 7 is a functional block diagram showing the composition of the receiver according to the embodiment 6 of the invention. The example of composition of the receiver which receives data broadcasting which the broadcast station according to Embodiment 5 makes include disaster information, and is broadcasting is shown by this Embodiment 6.

In drawing 7, identical codes are given to drawing 3 and an identical configuration part.

[0081] In drawing 7, the receiver 71 is a domestic deferred type receiver provided with NV-RAM (permanent memory storage), and the zip code of the self-area is preliminary stored by this NV-RAM (permanent memory storage).

[0082] The BML browser 72 which displays data broadcasting in the receiver 71 is provided with API which can filter and take out the information on an XML document file including position information.

[0083] In the receiver 71, if an addressee tunes in the program concerned, in a receiver, front end processing, transformer stream processing, decoding, etc. will be carried out, and the processed information will be passed to the BML browser 72.

[0084] In the BML browser 72, the Start Up BML document 73 is displayed automatically. In the Start Up BML document 73, the zip code of the self-area first stored to NV-RAM of a receiver is acquired. Next, the zip code of the acquired self-area is compared with the zip code in the received XML document, and it is judged whether the information around a self position existing in an XML document and a self position that is, correspond to a disaster area.

[0085] As a result, when the information related to a self position exists, the BML document 35 for disaster area is started automatically. In the case where the information related to a self position does not exist on



the other hand, except a disaster area BML document 36 is started automatically.

[0086] The BML document 35 for disaster area filters and acquires the detailed information related to a self position from an XML document, and displays required information. A still picture, an animation, etc. are displayed as occasion demands. In this case, it changes from the program to which user was viewing the program of emergency evacuation information, the display of a reminder of emergency evacuation is performed, and the button etc. which change to a disaster state, the confirmation button of victim information or the map screen of an evacuation area are displayed.

[0087] On the other hand, data broadcasting which that the disaster has occurred only notifies is expressed as a disaster area, with the external use BML document 36. In this case, the addressee can continue, view a program (an image and a sound).

[0088] Thus, according to the receiver according to this Embodiment 6, the zip code of a self-area is used, according to each addressee's situation, the information on the optimal data broadcasting can be made a display and non-display so that the usual data broadcasting may be received automatically, when data broadcasting, such as refuge information, is automatically received like Embodiment 2 when it corresponds to a disaster source division, and it does not correspond to a disaster source division.

[0089] The BML document 35 for disaster area, and a disaster area branching directions to the BML document 36, although the case where it carried out in the BML browser 72 was explained like Embodiment 2, it is possible to process in receiver functions (comparative examination part) other than the BML browser in a receiver as well as Embodiment 4.

[0090] [Embodiment 7] Drawing 8 is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 7 of the invention broadcasts. Example 4 of the position interlocking type data broadcast service method with which a broadcast station broadcasts genre information with position information as part of data broadcast service is shown by this Embodiment 7. In drawing 8, identical codes are given to drawing 2 and an identical configuration part.

[0091] In drawing 8, the broadcast station 81 is performing data broadcasting using the transmitting equipment 22 of a satellite and ground digital broadcasting. The genre information which the broadcast station 21 sends out as a part of this data broadcasting includes XML document 82 and the BML document 83 for every genre. Here, the broadcast station has arranged with genre information to the receivers concerned preliminary, and it consists of various information related to an addressee's taste, including traffic information, restaurant information,

news, shopping information besides disaster information, etc.

[0092] XML document 82 for every genre is a document which coded information, including the position information on the genre (latitude, longitude information), detailed information, a related map file name, etc., by XML for every genre. At this time, a still picture, an animation, related to information is sent out collectively. If the example of genre information is given, for example by restaurant information, the position information on each restaurant (latitude, longitude), the detailed information of a store, the access-routes information on the store, etc. are prepared for every restaurant.

[0093] The BML document 83 includes the Start Up BML document 84 and the BML document 85 for presentation for every genre. The Start Up BML document 84 is a document which performs the branching directions to the position information comparison about one XML document and the BML document 85 for presentation for every genre which were chosen from XML document 82 for every genre in the receiver. The BML document 85 for presentation for every genre is a document which presents the information around a self position in response to branching directions of the Start Up BML document 84.

[0094] Thus, at Embodiment 7, a broadcast station broadcasts the BML document which has a branching referential function, and the XML document of the

various genres related to an addressee's taste with position information by latitude longitude in the timing that it is arbitrary during broadcast of a data broadcast program. At this time, items, such as disaster information, are established into genre information, the information (flag) over necessity (urgency) is combined, and can be sent now, and disaster information as well as Embodiments 1, 3, 5 can be broadcast now.

[0095] [Embodiment 8] Drawing 9 is a functional block diagram showing the composition of the receiver according to the embodiment 8 of the invention. The example of composition of the receiver which receives data broadcasting which the broadcast station according to Embodiment 7 makes include genre information and is broadcasting is shown by this Embodiment 8.

[0096] In drawing 9, the information on an addressee's taste is preliminary registered into the receiver as a genre with the receiver 91. The BML browser 92 that displays data broadcasting in the receiver 91 is provided with API that can filter and take out the information on an XML document file including position information. This BML browser 92 can acquire latitude longitude information now from the position signal that GPS Satellite 33 transmits by API.

[0097] In the receiver 91, if an addressee tunes in the program concerned, in a receiver, front end processing, transformer stream processing, decoding, etc. will be

carried out, and the processed information will be passed to the BML browser 92.

[0098] In the BML browser 92, the Start Up BML document 93 is displayed automatically. In the Start Up BML document 93, the XML document of a genre applicable from the XML document for every genre is first chosen based on the genre information preliminary stored to the receiver. Next, as compared with the position information which acquired the present position information and read it out of the selected XML document, the existence of the information around a self position is judged from the sending signal of GPS Satellite 33.

[0099] As a result, search results are shown by the BML document 94 for presentation for every genre when it corresponds to the position of the information read out of the XML document which the self position chose (namely, when there is information related to a self position). When the information acquired from self position information exists in a plurality of genres at this time, it is shown by the BML document 94 for presentation for every genre once showing with a table. When it has the buffer part 95, buffering the above search results in the Start Up BML document 93 is performed as occasion demands.

[0100] The information related to a self position is acquired from the XML document of an applicable genre, and is expressed as the BML document 94 for presentation for every genre.

It combines, and detailed information, a related still picture, an animation, etc. are acquired from the XML document of an applicable genre, and are displayed.

[0101] After such information presentation, if an addressee gives directions of the end of presentation to the BML browser 92, the Start Up BML document 93 will rise again, and filtering the information in the present self position will be performed.

[0102] On the other hand, with branching directions of the Start Up BML document 93, when there is no information related to a self position, a BML browser does not start. That is, the addressee can continue, view the usual program screen (an image and a sound) 96. In this case, after that, by timer processing etc., at arbitrary intervals, the Start Up BML document 93 is read again, and search of information is begun again. Of course, an addressee is able to read the Start Up BML document 93 again compulsorily.

[0103] Although the above is reception of genre information related to an addressee's taste, the Start Up BML document 93 can display disaster information etc. according to the information (flag), when there is information (flag) over necessity (urgency), such as disaster information.

[0104] Thus, according to the receiver according to this Embodiment 8, the information on an addressee's taste is preliminary registered into a receiver as a genre, by searching automatically self position information, the position information on the information sent based on

the registered genre information, and genre information, it can display and can carry out non-display of the optimal information suitable for the position and taste of an addressee.

[0105] Since it is collectively sent by disaster information in genre information, about disaster information as well as Embodiments 2, 4, and 6, it can display and it can carry out non-display of the information (flag) over necessity (urgency).

[0106] [Embodiment 9] Drawing 10 is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 9 of the invention broadcasts. Example 5 of the position interlocking type data broadcast service method with which a broadcast station broadcasts genre information with position information as part of data broadcast service is shown by this Embodiment 9. In drawing 10, identical codes are given to drawing 2 and an identical configuration part.

[0107] In drawing 10, the broadcast station 101 is performing data broadcasting using the transmitting equipment 22 of a satellite and ground digital broadcasting. The genre information which the broadcast station 101 sends out as a part of this data broadcasting includes XML document 82 and the BML document 102 for every genre.

[0108] XML document 82 for every genre is a document which coded information, including the position information on the genre (latitude longitude

information), detailed information, a related map file name by XML for every genre, as Embodiment 7 explained. At this time, a still picture, an animation related to information is sent out collectively. If the example of genre information is given, for example by restaurant information, the position information on each restaurant (latitude, longitude), the detailed information of a store, the access-routes information on the store, etc. are prepared for every restaurant.

[0109] On the other hand, the BML document 102 is constituted from this Embodiment 9 by only the BML document 103 for presentation for every genre. The BML document for presentation for every genre is a document which actually presents information in response to branching directions with a receiver.

[0110] Thus, in Embodiment 9, a broadcast station broadcasts the BML document which receives branching directions from the receiver side, and the XML document of the various genres related to an addressee's taste with position information by latitude longitude in the timing that it is arbitrary during broadcast of a data broadcast program. At this time, items, such as disaster information, are established into genre information, the information (flag) over necessity (urgency) is combined, and can be sent now, and disaster information as well as Embodiments 1, 3, 5 can be broadcast now.



[0111] [Embodiment 10] Drawing 11 is a functional block diagram showing the composition of the receiver according to the embodiment 10 of the invention. The example of composition of the receiver which receives data broadcasting which the broadcast station according to Embodiment 9 makes include genre information, and is broadcasting is shown by this Embodiment 10.

[0112] In drawing 11, the information on an addressee's taste is preliminary registered into the receiver as a genre with the receiver 111. The receiver 51 is provided with the BML browser 113 which displays genre information and the position information comparing element 112, and data broadcasting.

[0113] Genre information and the position information comparing element 112 the genre information preliminary registered into the receiver to origin. The XML document of an applicable genre is chosen, latitude longitude information (self position) is acquired from the position signal which GPS Satellite 33 transmits, comparison and filtering are performed with the position information on the information in the taken-out XML document, and it performs starting the BML browser 113. The BML browser 113 is provided with API which can filter and take out the information on an XML document file including position information.

[0114] In the receiver 111, if an addressee tunes in the program concerned, in a receiver, front end processing, transformer stream processing, decoding, etc. will be

carried out, and the processed information will be passed to genre information and the position information comparing element 112.

[0115] In genre information and the position information comparing element 112, the XML document of a genre applicable from the XML document for every genre is first chosen based on the genre information preliminary stored to the receiver. Next, as compared with the position information which acquired the present position information and read it out of the selected XML document, the existence of the information around a self position is judged from the sending signal of GPS Satellite 33.

[0116] As a result, when a self position corresponds to the position of the information read out of the selected XML document (namely, when there is information related to a self position), the BML browser 113 is started automatically and the BML document 114 for presentation for every genre is started automatically. Once showing with a table in which the information acquired from self position information exists in a plurality of genres at this time, it is shown by the BML document 114 for presentation for every genre. When it has the buffer part 115, buffering the genre information acquired by genre information and the position information comparing element 112, self position information, and the information around a self position acquired from the XML document as occasion demands is performed.

[0117] The information related to a self position is acquired from the XML document of an applicable genre, and is expressed as the BML document 114 for presentation for every genre. It combines, and detailed information, a related still picture, an animation, etc. are acquired from the XML document of an applicable genre, and are displayed.

[0118] After such information presentation, if an addressee gives directions of the end of presentation to the BML browser 113, in genre information and the position information comparing element 112, filtering the information in the present self position will be performed again.

[0119] On the other hand, with branching directions of genre information and the position information comparing element 112, when there is no information related to a self position, the BML browser 113 is not started. That is, the addressee can continue, view the usual program screen (an image and a sound) 116. In this case, processing by genre information and the position information comparing element 112 is again started at arbitrary intervals by timer processing etc. after that. Of course, an addressee is possible also for processing by genre information and the position information comparing element 112 being started again compulsorily.

[0120] Thus, according to the receiver according to this Embodiment 10, the information on an addressee's taste is preliminary registered into a receiver as a genre, it

can display and can carry out non-display of the optimal information that was suitable for the position and taste of the addressee by searching automatically the position information on the information sent, and genre information from self position information and the registered genre information.

[0121] Since receiver functions (genre information and position information comparing element) other than a BML browser were made to perform the comparison branching directions with a self position and the position information in an XML document in this Embodiment 10 at this time, load of a BML browser can be made light and the information display to an addressee can be smoothly performed now. The self position information can use a GPS Satellite, and also can incorporate self position information with a cellular phone etc.

[0122] Into genre information, since it is collectively sent by disaster information, about disaster information as well as Embodiments 2, 4, 6, it can display and it can carry out non-display of the information (flag) over necessity (urgency).

[0123] [Effect of the invention] As explained above, according to this invention, a broadcast station as part of data broadcast service, since it enabled to make automatically a display and non-display the information on data broadcasting that the genre information in which position information and the information which accompanies it are included was broadcast, the receiver

judged the necessity for position information or an addressee, and taste, and it was suitable for every addressee, when the data broadcast service including position information will be started by the start of ground digital broadcasting etc. from now on, construction of the more advanced data broadcast service taken into consideration to an addressee's convenience, operability and life is achieved.

**[Brief description of the drawings]**

[Drawing 1] is a principle drawing explaining the position interlocking type data broadcast service of this invention.

[Drawing 2] is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 1 of the invention broadcasts.

[Drawing 3] is a functional block diagram showing the composition of the receiver according to the embodiment 2 of the invention.

[Drawing 4] is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 3 of the invention broadcasts.

[Drawing 5] is a functional block diagram showing the composition of the receiver according to the embodiment 4 of the invention.

[Drawing 6] is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 5 of the invention broadcasts.

[Drawing 7] is a functional block diagram showing the composition of the receiver according to the embodiment 6 of the invention.

[Drawing 8] is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 7 of the invention broadcasts.

[Drawing 9] is a functional block diagram showing the composition of the receiver according to the embodiment 8 of the invention.

[Drawing 10] is a drawing explaining the contents of broadcast which the broadcast station according to the embodiment 9 of the invention broadcasts.

[Drawing 11] is a functional block diagram showing the composition of the receiver according to the embodiment 10 of the invention.

[Drawing 12] is a drawing explaining the data broadcast service using the conventional currency information.

#### **[Description of numerals]**

21, 41, 61, 81, 101 Broadcast station

22 Transmitting equipment of a satellite and ground digital broadcasting

23, 62 XML documents

24, 42, 83, 102 BML document

31, 51, 71, 91, 111 Receiver

32, 53, 72, a 92, 113 BML browser

33 GPS Satellite

34, 73, 93 The Start Up BML document that BML browser reads first

35 The BML document for disaster area which receives branching directions by a Start Up BML document

36 The BML document except the disaster area which receives branching directions by a Start Up BML document

52 Position information comparing element

54 The BML document for disaster area which received presentation directions by the position information comparing element

55 The buffer part which stores temporarily the data acquired by the position information comparing element

56 The usual program screen which received presentation directions by the position information comparing element (an image and a sound)

82 The XML document for every genre

94 The BML document for presentation for every genre which received branching directions by the Start Up BML document

95 The buffer part which stores temporarily the search results in a Start Up BML document

96 The usual program screen which received branching directions by the Start Up BML document (an image and a sound)

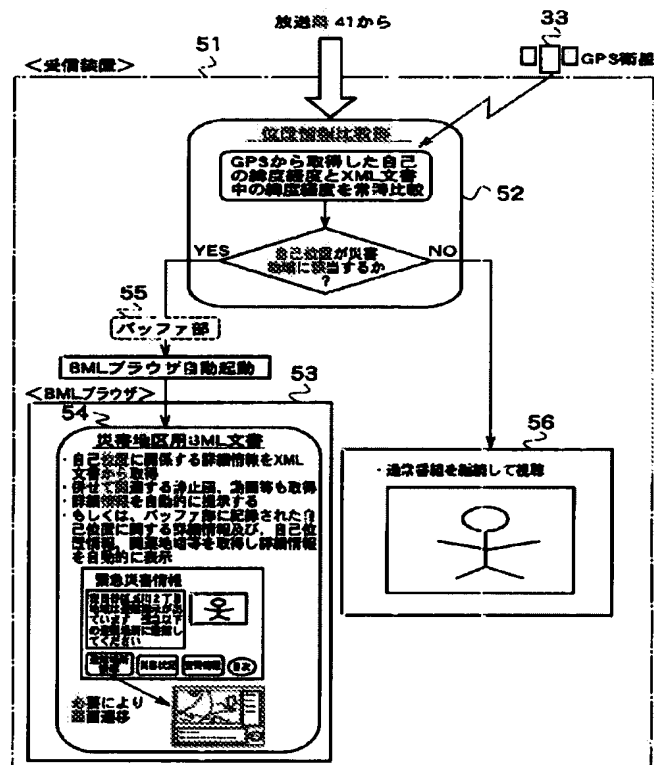
112 Genre information and a position information comparing element

114 The BML document for presentation for every genre which received presentation directions by genre information and a position information comparing element

115 The buffer part which stores temporarily the data acquired by genre information and a position information comparing element

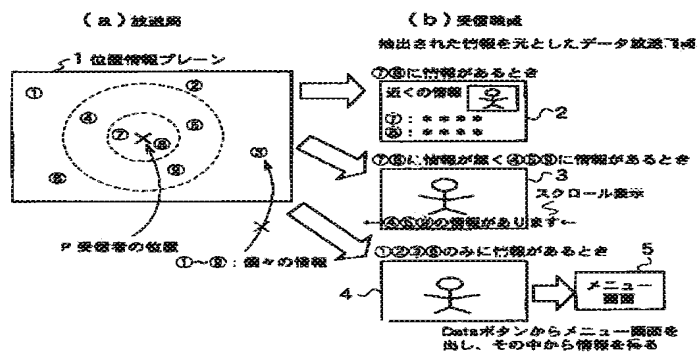
116 The usual program screen which received presentation directions by genre information and a position information comparing element (an image and a sound)

Drawing 5

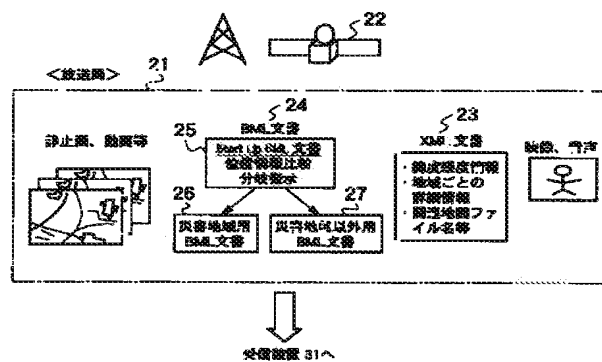




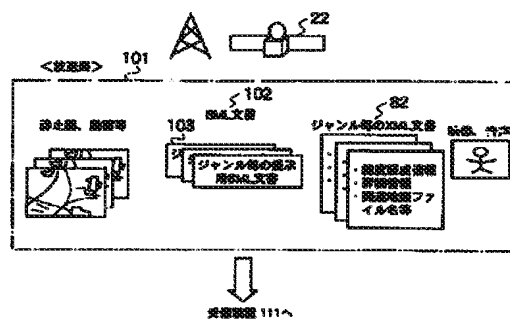
### Drawing 1



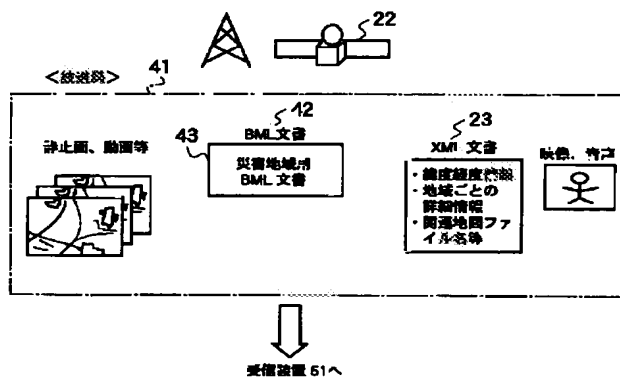
## Drawing 2



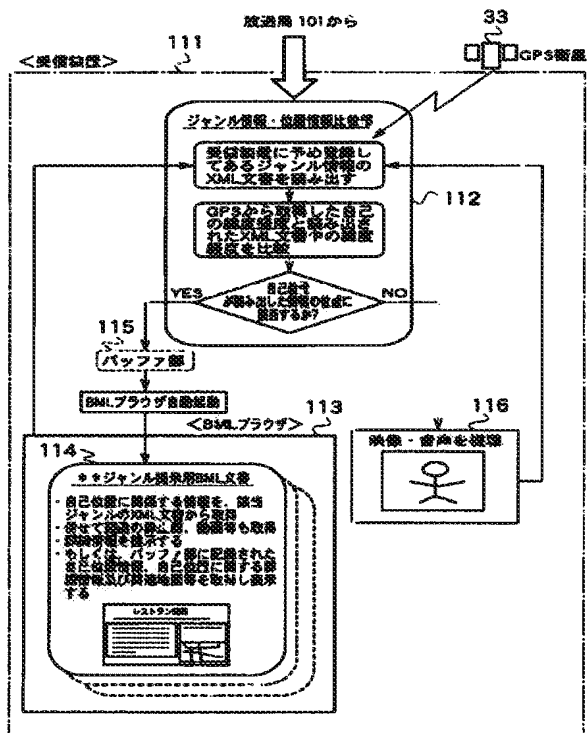
### Drawing 10



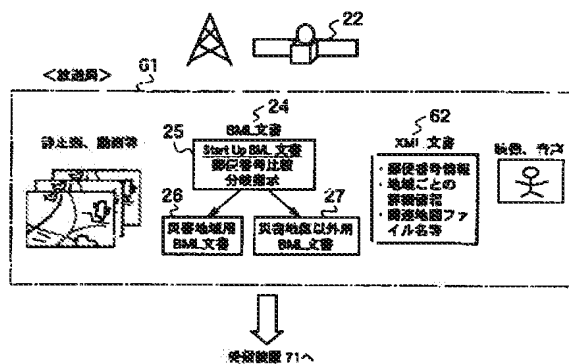
## Drawing 4



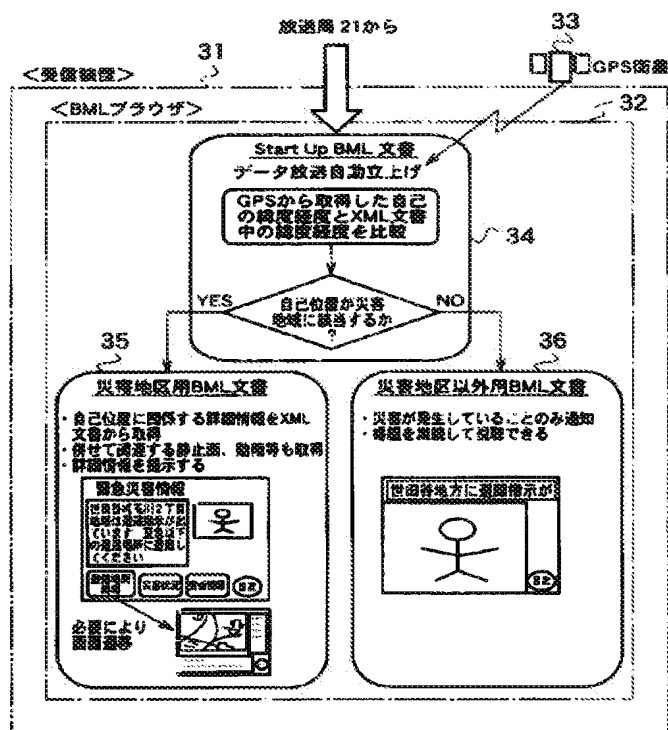
### Drawing 11



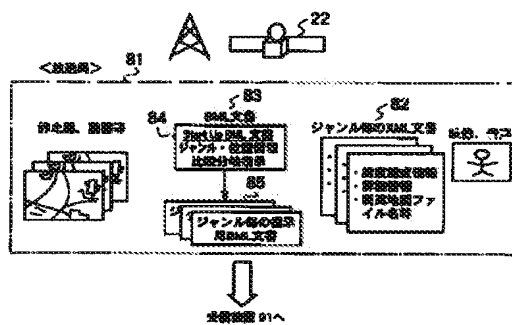
### Drawing 6



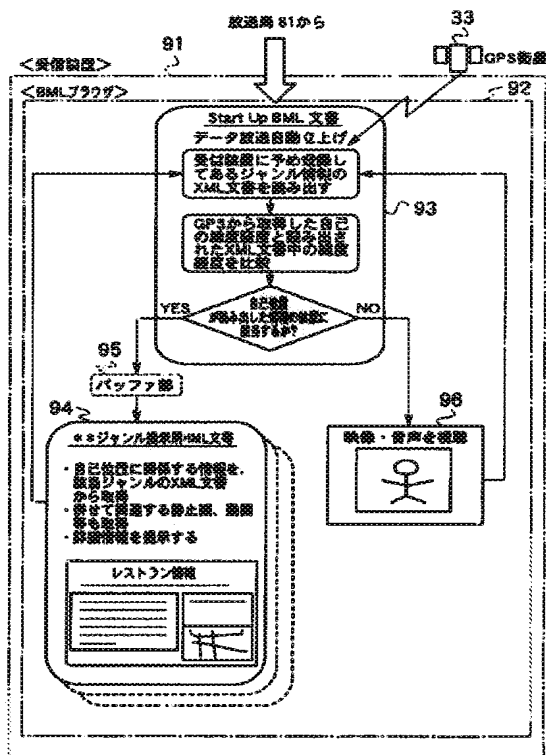
### Drawing 3



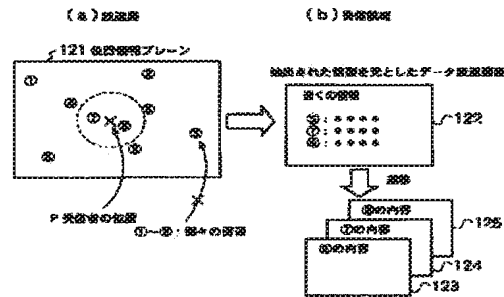
Drawing 8



Drawing 9



## Drawing 12



## Drawing 7

